ABSTRACT

Polycystic Ovary Syndrome (PCOS) is a hormonal imbalance brought on by the ovaries producing too many male hormones, which affects a woman's reproductive system during her childbearing age. PCOS has been identified as of the major factors of infertility in women. It also raises the likelihood of developing other illnesses including diabetes, high blood pressure, sleep difficulties, depression, and anxiety, among others. PCOS is a disorder that exists on a spectrum, thus not all PCOS sufferers exhibit the same signs and symptoms or, in some cases, any symptoms at all. This condition has a wide range of symptoms, making a diagnosis challenging. Long-term problems may be prevented with early detection and treatment. The goal of this research is to address this issue by implementing machine learning approaches for early PCOS identification based on several medical markers. The model uses a dataset of 541 women from 10 hospitals in Kerala. This paper examines trends and correlation within the medical parameters and determines the attributes which are most important in the diagnosis of PCOS. It experiments with various Classification models and compares them using various yardsticks to find the one which yields the greatest accuracy. Furthermore, it tries to achieve the most accurate result by using the concept of Tuning of parameters.

**Keywords**: PCOS, Tuning of parameters, dataset, machine learning, Classification models, correlation.

WORK PLAN

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| TASK | DESCRIPTION | START DATE | END DATE |
| Literature Survey | Research on the topics, related works. Collection and Cleaning of dataset. | 08/10/22 | 12/10/22 |
| Module 1 | Methodology Selection | 13/10/22 | 17/10/22 |
| Module 2 | Exploratory Data Analysis | 18/10/22 | 08/11/22 |
| Module 3 | Preparation of data for Modelling and Model building | 09/11/22 | 29/11/22 |
| Module 4 | Implementation and Evaluation of models | 30/11/22 | 25/12/22 |
| Module 5 | Results and Discussion | 26/12/22 | 31/12/22 |
| Module 6 | Writing research paper | 01/01/23 | 11/01/23 |